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NOVE TEHNOLOGIJE I UPRAVLJANJE INFORMACIJAMA U UGOSTITELJSTVU: ANALIZA VISOKOKATEGORIZIRANIH HOTELA U ITALIJI I HRVATSKOJ

NEW TECHNOLOGIES AND INFORMATION MANAGEMENT IN THE HOSPITALITY INDUSTRY: ANALYSIS BETWEEN UPSCALE HOTELS IN ITALY AND CROATIA

SAŽETAK: Uvođenje novih tehnologija i upravljanje informacijama neprestano pružaju priliku za diferencijaciju unutar uslužnog sektora, a posebice u hotelijerstvu. Napredak informacijsko komunikacijske tehnologije (ICT) dao je pozitivan doprinos ugostiteljstvu. Oblikovanje usluga i jačanje lojalnosti klijenata uvelike ovise o dostupnosti podataka o njima. Stoga je svrha ovog istraživanja ispitati primjenu novih tehnologija i upravljanja podacima u hotelijerstvu iz perspektive menadžera i korisnika usluga. Cilj rada je utvrditi postoje li razlike u njihovoj uporabi i percepciji između visokokategoriziranih hotela u Italiji i Hrvatskoj.

KLJUČNE RIJEČI: informacijska i komunikacijska tehnologija (ICT), upravljanje podacima, lojalnost klijenata, visokokategorizirani hoteli, Italija, Hrvatska

SUMMARY: The adoption of new technologies and information management continuously provide opportunities for differentiation within the service industry in general and the hotel context in particular. Advancements in Information and Communication Technology (ICT) have positively contributed to the hospitality industry. Moreover, the supply of information about customers is an inevitable practice for service customization and encouragement of customer loyalty. The purpose of this study is to explore the implementation of new technologies and information management in the hotel context from both manager and consumer perspectives. It aims to observe whether there are differences in their use and perception between upscale hotels in Italy and Croatia.

KEYWORDS*:* Information and Communication Technology (ICT), information management, customer loyalty, upscale hotels, Italy, Croatia

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1. UVOD

Napredak u informacijskoj i komunikacijskoj tehnologiji (ICT) važan je izvor konkurentske prednosti (Gil et al., 2007) jer tvrtkama pruža nove upravljačke mogućnosti (Berenguer et al., 2009). Usporedivši ugostiteljstvo s tvrtkama u drugim djelatnostima, novije su studije pokazale da se po primjeni informacijske i komunikacijske tehnologije hotelijerstvo rangiralo među prvih deset djelatnosti (eBusiness W@tch, 2006; Observatorio, 2007a; 2007b). Od devedesetih godina prošlog stoljeća primjena ICT-a u hotelskom se sektoru ne razmatra isključivo u vezi s produktivnošću, nego i sa stvaranjem neopipljive koristi, poput zadovoljstva klijenata uslugom (Law and Jogaratnam, 2005), te kao poticaj kreiranju odnosa unutar tvrtke, između tvrtki i sa strankama (Jang et al., 2006; Daghfous & Barkhi, 2009). Utjecaj ICT-a na marketing odnosa značajan je (Moller & Halinen, 2000; Gummesson, 2002; Sheth, 2002; Ruiz et al., 2010b) jer olakšava pohranu i obradu velike količine podataka o klijentima pa omogućuje provedbu personaliziranih marketinških kampanja (Shapiro & Varian, 2000). Zato je upravljanje podacima od kritične važnosti za stvaranje konkurentske prednosti i poslovni uspjeh hotelskih tvrtki općenito, a posebice je važno za jačanje lojalnosti klijenata (Piccoli, 2008).

Unatoč tome, znanstvena zajednica ne poklanja mnogo pažnje ulozi koju ukupni učinak ICT-a može imati u diferencijacijskoj strategiji hotela (Ruiz et al., 2011). Ova bi tema mogla biti od posebnog značaja kako za hotele koji djeluju u dobro poznatim turističkim odredištima (npr. Italija), gdje vlada jaka konkurencija, tako i za hotele koji djeluju na novim odredištima (npr. Hrvatska), a natječu se s tvrtkama u drugim geografskim područjima. Nadalje, iako su posljednjih godina provedena istraživanja iz perspektive menadžera i potrošača u sekto-

1. INTRODUCTION

Information and Communication Technology (ICT) advancements represent an important source of competitive advantage (Gil et al., 2007) that provides companies with new management possibilities (Berenguer et al., 2009). Recent studies have pointed out that the hospitality industry is at the top in terms of ICT adoption, compared to companies operating in other industries (eBusiness W@tch, 2006; Observatorio, 2007a; 2007b). From the 1990s, the use of ICT in the hotel sector started to be considered not only in terms of productivity, but also in terms of intangible benefits such as client service and satisfaction (Law & Jogaratnam, 2005) and as an incentive to establish intra-company, inter-company, and customer relationships (Jang et al., 2006; Daghfous & Barkhi, 2009). Therefore, ICT impact on relationship marketing is remarkable (Moller & Halinen, 2000; Gummesson, 2002; Sheth, 2002; Ruiz et al., 2010b), as it facilitated the storing and processing of a great amount of information about the clients, in order to carry out personalized marketing campaigns (Shapiro & Varian, 2000). Thus, information management is critical to the creation of competitive advantage and business success of the hotel companies in general and encouragement of customer loyalty in particular (Piccoli, 2008).

However, academics have paid little attention to the role that the overall ICT impact might play in the differentiation strategies of hotels (Ruiz et al., 2011). This might be of particular interest for both hotels operating in established tourist destinations (e.g., Italy), with a high degree of market rivalry, and for those operating in emerging holiday destinations (e.g., Croatia), which try to compete against establishments located in other geographical areas. Furthermore, in last few years, luxury and first class hotel sectors have been researched from both manager and consumer perspectives. However, recent

ru luksuznih i prvorazrednih hotela, novije studije naglašavaju da je potrebno dodatno istražiti iskustva korisnika usluga (npr. Wilkins et al., 2010; Walls et al., 2011). Stoga je cilj ovoga rada istražiti primjenu ICT rješenja i upravljanja podacima u hotelskom kontekstu iz perspektive menadžera i gostiju te utvrditi postoje li razlike u njihovoj primjeni i percepciji između hotela s pet i četiri zvjezdice u Italiji i Hrvatskoj.

2. KONCEPTUALNI OKVIR

2.1. ICT u ugostiteljstvu

Informacijska tehnologija definira se kao „izraz koji obuhvaća sve oblike tehnologije koja se rabi kako bi se kreirali, zabilježili, manipulirali, komunicirali, razmijenili, predstavili i koristili podaci u svim svojim različitim oblicima (poslovni podaci, glasovna konverzacija, nepokretne slike, pokretne slike, multimedijske prezentacije i drugi oblici, uključivši i one koji još nisu koncipirani)“ (Ryssel et al., 2004:198).

Hoteli imaju na raspolaganju širok raspon tehnoloških rješenja (Law & Jogaratnam, 2005; eBusiness Watch, 2006; Observatorio, 2007a; 2007b) koja mogu zamijeniti postojeće sustave i tako unaprijediti njihovu operativnu učinkovitost (Law & Jogaratnam, 2005). Mnoge su se studije usredotočile na analizu primjene ovih rješenja od strane hotela, kao i na prednosti koje proizlaze iz primjene tehnologije (e.g., Buick, 2003; Frey et al., 2003; Lee et al., 2003; Murphy et al., 2003; Sigala, 2003; Baggio, 2004; Law & Jogaratnam, 2005; Sahadev & Islam, 2005; Jang et al., 2006; Kothari et al., 2007; Observatorio, 2007b; Irvine & Anderson, 2008; Daghfous & Barkhi, 2009; Ruiz et al., 2010a; 2011; Šerić & Gil, 2011). Ove su studije identificirale velik broj ICT rješenja u hotelskom sektoru. Ruiz i suradnici (2010a) dijele ih u dvije glavne skupine: (a) ICT unutar kuće (npr. hotelski *hardware* i *software*, tehnologije za umrežavanje i povezivanje te integrirani poslovni procesi), i (b) ICT za vanjsku uporabu (npr. rješenja za elektronički

studies have highlighted that consumer insights need further research (e.g., Wilkins et al., 2010; Walls et al., 2011). Therefore, this study aims to explore the implementation of ICT solutions and information management in the hotel context from both managers' and guests' points of view and observe whether there are differences in their adoption and perception between five-star and four-star hotels in Italy and Croatia.

2. CONCEPTUAL FRAMEWORK

2.1. ICT in the hospitality industry

Information technology is defined as "a term that encompasses all forms of technology utilized to create, capture, manipulate, communicate, exchange, present, and use information in its various forms (business data, voice conversations, still images, motion pictures, multimedia presentations, and other forms, including those not yet conceived)" (Ryssel, et al., 2004:198).

Hotels have a wide range of technological solutions (Law & Jogaratnam, 2005; eBusiness Watch, 2006; Observatorio, 2007a; 2007b) that can replace existing systems, thus improving their operational efficiency (Law & Jogaratnam, 2005). Many studies have focused on the analysis of the implementation of these solutions by hotels, as well as the advantages arising from the use of technology (e.g., Buick, 2003; Frey et al., 2003; Lee et al., 2003; Murphy et al., 2003; Sigala, 2003; Baggio, 2004; Law & Jogaratnam, 2005; Sahadev & Islam, 2005; Jang et al., 2006; Kothari et al., 2007; Observatorio, 2007b; Irvine & Anderson, 2008; Daghfous & Barkhi, 2009; Ruiz et al., 2010a; 2011; Šerić & Gil, 2011). These studies identified a large number of ICT facilities in the hotel sector. In particular, Ruiz et al. (2010a) classified them into two major groups: (a) in-house ICT (e.g., hotel hardware and software, network connectivity technologies, and business integrated processes), and (b) ICT

marketing i prodaju, upravljanje odnosima sa strankama, tj. *Customer Relationship Management* – CRM, ICT rješenja koja se odnose na stranke, upravljanje elektroničkom ponudom) (Tablica 1).

Ipak se čini da hotelski menadžeri nisu dovoljno svjesni važnosti ICT-a za razvojne strategije tvrtke (Law & Jogaratnam, 2005). Oni zapravo i dalje sumnjaju da je ulaganje u ICT učinkovito (Luck & Lancaster, 2003). Istraživanja koja su Frey i suradnici (2003) te Murphey i suradnici (2003) proveli u 200 švicarskih hotela otkrila su da je vjerojatnost za brzo, ljubazno i personalizirano ispunjenje očekivanja manja od 10%. Osim toga, Ruiz i suradnici (2010a) zabilježili su da složenost rješenja za upravljanje odnosima s klijentima (CRM) rezultira vrlo niskom razinom razumijevanja njihovih mogućnosti, vrijednosti i načina rada (Magnini et al., 2003) te da će uspješni hoteli biti oni koji će se ICT-om koristiti djelotvorno, s ciljem trenutnog zadovoljenja promjenjivih želja i potreba klijenata (Olsen & Connolly, 2000).

2.2. Upravljanje podacima u službi jačanja lojalnosti klijenata

Nekoliko je istraživanja pokazalo da obrada podataka o klijentima i upravljanje podacima igraju ključnu ulogu u stjecanju konkurentske prednosti u hotelijerstvu (Shoemaker & Lewis, 1999; Palmer et al., 2000; Magnini et al., 2003; Minghetti, 2003; Piccoli, 2008; Chatzipanagiotou & Coritos, 2010; Ruiz et al., 2010a). Hotelske informacijske sustave ipak je potrebno dodatno istražiti s ciljem utvrđivanja primjerenog načina njihove primjene (Chatzipanagiotou & Coritos, 2010). Središnja je tema ovog rada upravljanje podacima, a pri tome mislimo na učinkovito prikupljanje, pohranu, obradu i distribuciju podataka o klijentima (Piccoli, 2008). Nedavni brzi razvoj novih tehnologija olakšao je ovaj proces stvaranjem baza podataka koje pomažu tvrtkama zabilježiti precizne podatke o svojim klijentima (Minghetti, 2003;

for external use (e.g., electronic marketing and sales solutions, Customer Relationship Management - CRM, ICT solutions related to customers, and electronic supply management) (Table 1).

However, it seems that hotel managers still hardly appreciate the importance of ICT for business development strategies (Law & Jogaratnam, 2005). In fact, managers' doubts about the efficacy of ICT investments still persist (Luck & Lancaster, 2003). The studies of Frey et al. (2003) and Murphy et al. (2003), carried out in 200 Swiss hotels, revealed that prospects had less than a one in 10 chance of receiving a quick, courteous, and personal reply. In addition, Ruiz et al. (2010a) noted that, due to the complexity of CRM solutions, the level of understanding of their possibilities, their value, and the way they work is low (Magnini et al., 2003) and that successful hotels will be those that use the ICT effectively, with the aim of instantly satisfying clients' variable desires and needs (Olsen & Connolly, 2000).

2.2. Information management as a customer loyalty incentive

Several studies showed that customer data processing and information management are key aspects for gaining competitive advantage in the hotel context (Shoemaker & Lewis, 1999; Palmer et al., 2000; Magnini et al., 2003; Minghetti, 2003; Piccoli, 2008; Chatzipanagiotou & Coritos, 2010; Ruiz et al., 2010a). However, information systems in hotels need further research in order to determine how they should be implemented (Chatzipanagiotou & Coritos, 2010). This paper centers on information management, considered as an effective collection, storing, processing, and distribution of information about customers (Piccoli, 2008). The recent rapid development of new technologies has facilitated this process through the creation of databases that help companies capture precise data on customers (Ming-

Piccoli, 2008). Podaci koje dobijemo od klijenata mogu se iskoristiti za izgradnju točnije i potpunije baze podataka, kao i za točnije opisivanje postojećih segmenata ili identifikaciju novih (Peltier et al., 2003). Stoga će dobro oblikovana baza podataka omogućiti tvrkama bilježenje želja i potreba svojih gostiju te prilagođavanje usluga (Shoemaker & Lewis, 1999; Ruiz et al., 2010a).

Piccoli (2008) je utvrdio da hotelske tvrtke mogu stvoriti znatnu ekonomsku vrijednost od korištenja podataka. Prema njemu, to je moguće zbog sljedećih osobina podataka: a) njihova proizvodnja je skupa; b) njihova reprodukcija i distribucija su jeftine; i c) uporabom se podaci ne troše. Stoga je kreiranje podataka načelno skupo. U ugostiteljstvu hotel treba uložiti znatna sredstva u različite ICT aplikacije kako bi dobio jednu jedinu internetsku rezervaciju. Međutim, kada se ICT struktura implementira, broj internetskih rezervacija inkrementalno raste uz minimalne troškove. Nadalje, kako je prilagođavanje podataka jeftino i jednostavno, isti se podaci mogu rabiti više puta u različim oblicima.

Osim toga, nužno je napomenuti da je upravljanje podacima korisno u planiranju, primjeni i kontroli komunikacije (Peltier et al., 2003) te kontroli programa lojanosti (Shoemaker & Lewis, 1999; Palmer et al., 2000). Peltier i suradnici (2003) drže da bi stalna analiza podataka mogla olakšati ispravnu klasifikaciju klijenata, što bi tvrtkama u konačnici omogućilo da kreiraju učinkoviti interaktivni marketinški program za komunikaciju. Palmer i suradnici (2000) pokazali su da programi lojalnosti čuvaju podatke o demografskom statusu i obrascima trošenja pojedinih klijenata, što bi moglo značajno pridonijeti bazi znanja određene tvrtke. Međutim, mnogi hoteli ne nastoje prikupiti podatke o svojim klijentima nego koriste programe lojalnosti kako bi klijentima dodijelili nagrade proporcionalne potrošenom iznosu (Ranby, 1995). Ovakvi se programi

hetti, 2003; Piccoli, 2008). The data received from customers can be used to make a more accurate and complete database as well as to refine current segments and identify new ones (Peltier et al., 2003). Thereby, a properly designed database will enable firms keep track of guests' preferences and provide customized service (Shoemaker & Lewis, 1999; Ruiz et al., 2010a).

Piccoli (2008) found that hotel companies can use information in order to create substantial business value. According to him, this is possible owing to the following characteristics of information: a) it is costly to produce; b) it is cheap to reproduce and distribute; and c) it is not consumed by use. Thus, the first copy of information is generally expensive to create. In the hospitality industry, a hotel needs to invest considerably in different ICT applications in order to collect a single reservation on the Web. However, once the ICT infrastructure is implemented, incremental reservations can be captured on the Web site at a minimal cost. Moreover, as information can be customized inexpensively and simply, it can be reused multiple times and in many different forms.

Furthermore, it should be noted that information management has a valuable role in the planning, implementation, and control of both communication (Peltier et al., 2003) and loyalty programs (Shoemaker & Lewis, 1999; Palmer et al., 2000). Peltier et al. (2003) suggested that continuous analysis of data could facilitate the correct classification of customers, which would enable firms to create an effective interactive marketing communication program as a final result. Palmer et al. (2000) demonstrated that loyalty programs store individual customers' demographic statuses and spending patterns, which could contribute significantly to a company's knowledge base. However, many hotels do not seek to obtain information about customers, but instead use their loyalty programs in order to give rewards in proportion to their expenditure (Ranby, 1995). These programs can be considered limited, as they

mogu smatrati ograničenima jer nude manje mogućnosti za razvijanje individualnog marketinškog odnosa sa svakim klijentom te je manje vjerojatno da će razviti afektivnu lojalnost. Nadalje, čak i ako se prikupljaju podaci o klijentima, najčešće se radi o podacima o njihovom ponašanju, a ne o njihovim stavovima (Palmer et al., 2000). Stoga pravi izazov u kontekstu lojalnosti klijenata ne predstavlja tek razvoj strukturiranih informacijskih sustava, nego uporaba prikupljenih informacija na način koji omogućuje oblikovanje usluga prema željama i potrebama pojedinih klijenata. Ovakav će pristup dovesti do nastanka vrhunske vrijednosti za klijenta i potaknuti ga na ponovnu kupnju (Shoemaker & Lewis, 1999; Minghetti, 2003; Palmer et al., 2000; Piccoli, 2008; Ruiz et al., 2010a).

2.3. Italija i Hrvatska kao turističke destinacije

Italija je poznato turističko odredište, na petom mjestu u svijetu po broju međunarodnih turističkih dolazaka i prihoda od međunarodnog turizma. Unatoč tome, Italija je 2010. izvijestila o slabom rastu međunarodnih turističkih dolazaka (+0,9%) i prihoda od međunarodnog turizma (+1,4%) (UNWTO, 2011). Talijanski turizam raste i trenutno predstavlja treći po veličini izvor prihoda iz inozemstva (Babalola et al., 2011). Ukupni doprinos putovanja i turizma, zajedno s njihovim širim gospodarskim učincima, predstavlja 8,6% BDP te se očekuje da će porasti za 2,0% do 2012 (WTTC, 2011A). Glavne europske konkurente Italije nalazimo među poznatim turističkim odredištima (npr. Španjolska i Francuska) i među odredištima u nastajanju (npr. Jadranska regija koji je 2010. imala izuzetne rezultate što se tiče međunarodnih turističkih dolazaka i prihoda) (UNWTO, 2011).

U razdoblju od siječnja do prosinca 2011., a u usporedbi s istim razdobljem 2010., broj turističkih dolazaka u svim oblicima smještaja u Republici Hrvatskoj porastao je za 8,0%, dok je broj turističkih noćenja

offer less opportunity to develop one-to-one marketing relationships with each customer and are less likely to develop affective loyalty. Moreover, even when information about customers is collected, it is usually of a behavioral rather than an attitudinal nature (Palmer et al., 2000). Thereby, the real challenge in the context of customer loyalty is not only to develop structured information systems, but also to use the collected information effectively in order to customize service according to individual customers' preferences. This will provide superior value to the customer and will stimulate repeat purchase (Shoemaker & Lewis, 1999; Minghetti, 2003; Palmer et al., 2000; Piccoli, 2008; Ruiz et al., 2010a).

2.3. Italy and Croatia as tourist destinations

Italy is an established tourist destination, ranking fifth worldwide in both international tourist arrivals and international tourist receipts. However, the country reported weak growth in 2010 in terms of international tourist arrivals (+0.9%) and international tourist receipts (+1.4%) (UNWTO, 2011). The Italian tourism industry is growing and currently represents its third largest source of foreign income (Babalola et al., 2011). The total contribution of travel and tourism, including its wider economic impacts, represents 8.6% of GDP, and is expect to rise by 2.0% by 2021 (WTTC, 2011a). The major European competitors of Italy are both established tourist destinations (e.g., Spain and France) and emerging ones (e.g., the Adriatic region, which posted remarkable results in 2010 in terms of international tourist arrivals and receipts) (UNWTO, 2011).

In particular, in the period from January to December 2011, as compared to the same period in 2010, the number of tourist arrivals in all accommodation facilities in the Republic of Croatia increased by 8.0%, while the number of tourist nights increased

porastao za 7,0% (CROSTAT, 2012). Prema izvješću Svjetskog vijeća za putovanja i turizam (WTTC), ukupni doprinos od putovanja i turizma hrvatskom BDP-u dosegao je 27,6% u 2011. te se predviđa njegov porast za 4,3% do 2021. (WTTC, 2011b), što je gotovo četiri puta više od prosječnog udjela turizma u BDP-u Europske unije. Stoga se Hrvatska smatra jednim od glavnih turističkih odredišta u nastajanju u području Sredozemlja (Marrero & Santana, 2008). Usprkos recentnoj ekonomskoj recesiji, Hrvatska je uspjela iskoristiti svoju prekrasnu obalu i brojne otoke te privući sredstva iz privatnog i javnog sektora (Norton, 2010). Osim toga, kako bi učvrstila imidž Hrvatske kao jedne od najprivlačnijih odredišta u Europi, Europska udruga putničkih agenata i turoperatora (ECTAA) odlučila je promovirati Hrvatsku kao svoje omiljeno turističko odredište za 2011.-2012. Tako Hrvatska ima izgleda pozicionirati se kao jedno od glavnih turističkih odredišta u Europi (Ministarstvo turizma – Republika Hrvatska, 2011).

Nadalje, analiza fenomena konkurentnosti koju je 2011. proveo Svjetski gospodarski savjet za putovanja i turizam na uzorku od 139 zemalja svijeta otkrila je da postoje male razlike između Italije i Hrvatske (Svjetski gospodarski forum, 2011). S jedne strane, Italija je 20. na rang listi zemalja u Europi i 27. ukupno. Osim kulturnog bogatstva, međunarodnih sajmova i izložbi, te uspješnih kreativnih industrija, položaju Italije pridonose visoki rezultati u području zdravlja i higijene (27. mjesto), infrastrukture zračnog prometa (30. mjesto) i izvrsnost turističke infrastrukture (1. mjesto). U pogledu ICT infrastrukture, Italija je na 34. mjestu. Nasuprot tome, Hrvatska je na 24. mjestu u Europi te na 34. u ukupnom poretku, što je daleko bolje od nekoliko zemalja članica EU. Hrvatska se može pohvaliti s 15 kulturnih i jednim prirodnim spomenikom svjetske baštine. Dvadeseta je na listi prema ukupnom afinitetu za putovanja i turizam, 4. što se tiče specifične turističke infrastrukture, a informacijsko-komunikacijsko-tehnološka (ICT) infrastruktura joj je na 35. mjestu.

by 7.0% (CROSTAT, 2012). According to the World Travel & Tourism Council report, the total contribution of travel and tourism to GDP in Croatia reached 27.6% in 2011 and is forecast to rise by 4.3% by 2021 (WTTC, 2011b), which is almost four times the average weight of tourism in GDP in the European Union. Therefore, Croatia is considered as one of the major emerging tourist destinations in the Mediterranean area (Marrero & Santana, 2008). Despite the recent economic recession, the country managed to take advantage of its beautiful coast and numerous islands and attract funding from both public and private sectors (Norton, 2010). In addition, in order to consolidate the image of Croatia as one of the most attractive destinations in Europe, European Travel Agents' and Tour Operators' Associations (ECTAA) decided to promote Croatia as their favourite tourist destination for 2011-2012. Thus, Croatia is looking to position itself as a major tourist destination in Europe (Ministry of Tourism - Republic of Croatia, 2011).

Furthermore, when analyzing the phenomenon of the World Economic Council's Travel & Tourism Competitiveness among 139 worldwide countries in 2011, small differences were observed when comparing Italy and Croatia (World Economic Forum, 2011). On the one hand, Italy is the 20th ranked country in Europe and the 27th overall. Together with cultural richness, international fairs and exhibitions, and prosperous creative industries, Italy's strengths lie in areas such as the health and hygiene (27th), its air transport infrastructure (30th), and especially its excellent tourism infrastructure (ranked first). In terms of ICT infrastructure, Italy is ranked 34th. On the other hand, Croatia is ranked 24th in Europe and 34th overall, which is well ahead of several EU members. It is endowed with a remarkable amount of 15 cultural and one natural World Heritage sites. It is ranked 20th in terms of its overall affinity for Travel & Tourism. In addition, Croatia's tourism-specific infrastructure is ranked 4th, while its ICT infrastructure is ranked 35th.

Čini se da na ukupni rezultat Italije i Hrvatske negativno djeluju slični čimbenici. Tako se u Italiji (84. mjesto) uslijed nedostatka stranog vlasništva i transparentnosti u donošenju vladinih odluka već nekoliko godina pogoršava kvaliteta zakonodavne regulative. Slično tome, Hrvatska mora svoju nacionalnu regulativu dovesti u sklad s potrebama sektorskog razvoja (77. mjesto). Nadalje, u obje zemlje je potrebno unaprijediti infrastrukturu zemnog prometa, posebice željeznica i luka te infrastrukturu zračnog prometa u Hrvatskoj (Svjetski gospodarski forum, 2011).

3. ISTRAŽIVAČKA PITANJA

Cilj ovog istraživanja je provesti detaljnu analizu koncepata ICT-a i upravljanja podacima u talijanskom i hrvatskom hotelijerstvu iz perspektive menadžera i gostiju.

Pregled literature dokazuje da ICT ima značajan utjecaj na hotelski sektor. Štoviše, na temelju učinkovite primjene novih tehnologija moguće je predvidjeti uspjeh u poslovanju (Olsen & Connolly, 2000). Prema rezultatima istraživanja koje je proveo Baggio (2004), talijanski segment hotelijerstva karakterizira načelno niska uporaba tehnologije. Suprotno tome, hrvatske hotele karakterizira relativno visoka usvojenost ICT rješenja (Šerić & Gil, 2011). Stoga prvo istraživačko pitanje glasi:

P1: Usporediti primjenu novih tehnologija u viskokategoriziranim hotelima u Italiji i Hrvatskoj te utvrditi postoje li razlike između hotela s pet i četiri zvjezdice.

U suvremenom digitalnom okruženju, potrošači su navikli na višestruke izvore informacija, što konstantno podiže razinu njihove zahtjevnosti. Štoviše, potrošači usvajaju sve proaktivniji stav dok otvoreno iznose svoja mišljenja i zapažanja. Stoga profesionalci moraju prihvatiti pristup izvana prema unutra koji će im omogućiti da definiraju i preciziraju svoje strateške ciljeve (Gurău, 2008).

It seems that both Italy and Croatia face similar challenges that bring their overall rating down. Thus, policy rules and regulations in Italy (ranked 84th) have been consistently getting worse over the past few years because of its lack of foreign ownership and its lack of transparency in government policymaking. Similarly, Croatia needs to bring policy rules and regulations in the country more in line with those that are needed for developing the sector (ranked 77th). Moreover, ground transport infrastructure requires improvements in both countries, particularly in railroads, ports, and air transport infrastructure in Croatia (World Economic Forum, 2011).

3. RESEARCH QUESTIONS

The objective of this study is to carry out a detailed analysis of ICT and information management concepts in the Italian and Croatian hotel environment from both managers' and guests' points of view.

The literature review has proved the considerable impact of ICT on the hotel sector, predicting that successful companies will be those that implement new technologies effectively (Olsen & Connolly, 2000). According to the results of Baggio's (2004) study, the Italian hotel segment is characterized by a generally low usage of technologies. In contrast, Croatian hotels showed a relatively high adoption of ICT solutions (Šerić & Gil, 2011). Thereby, the first research question is:

Q1: Compare the adoption of new technologies in upscale hotels in Italy and Croatia and observe whether there are differences between five-star and four-star properties.

In the current digital landscape, consumers have access to multiple sources of information, which makes them increasingly demanding. Moreover, they are adopting a more proactive attitude as they explicitly express their opinions and perceptions. Therefore, professionals must embrace the outside-in approach that will allow them to define and refine their strategic objectives (Gurău, 2008).

U skladu s tim razmatranjima postavljeno je i drugo istraživačko pitanje.

P2 Usporediti zapažanja gostiju o novim tehnologijama u viskokategoriziranim hotelima u Italiji i Hrvatskoj te utvrditi postoje li razlike između onih koji su boravili u hotelima s pet i onima s četiri zvjezdice.

Nove tehnologije olakšale su upravljanje podacima i učinkovitu analizu podataka (Piccoli, 2008), što je ključan preduvjet za razvoj komunikacijskih kampanja (Peltier et al., 2003) i programa lojalnosti (Shoemaker & Lewis, 1999; Palmer et al., 2000). Što više podataka tvrtka ima o svojim klijentima, to će ih točnije moći klasificirati. Ovaj zaključak nalaže da je za bolje razumijevanje klijenata na individualnoj razini nužna stalna analiza podataka (Peltier et al., 2003). U vezi s time Bunja (2003) je istaknuo da su u hotelskom sektoru u Hrvatskoj nužne nove menadžerske aktivnosti. Treće istraživačko pitanje stoga glasi:

P3 Usporediti upravljanje podacima u vrhunskim hotelima u Italiji i Hrvatskoj te utvrditi postoje li razlike između hotela s pet i četiri zvjezdice.

Dobro je poznato da je jedan od glavnih ciljeva marketinških akcija povećanje lojalnosti klijenata i održavanje stalnih odnosa s njima (Moliner et al., 2011). Ako tvrtka učinkovito upotrebljava prikupljene podatke o klijentima, klijenti će dobiti superiornu vrijednost i to će ih potaći na ponovnu kupnju, odnosno ojačat će lojalnost klijenata (Shoemaker & Lewis, 1999; Minghetti, 2003; Palmer et al., 2000; Piccoli, 2008; Ruiz et al., 2010a). Nadalje, osim što ponovno kupuju, zadovoljni i lojalni klijenti preporučit će proizvode tvrtke drugima, što će privući nove klijente (Veloutsou et al., 2005). U skladu s ovim razmatranjima, definirano je i četvrto istraživačko pitanje:

P4 Usporediti lojalnost klijenata u vrhunskim hotelima u Italiji i Hrvatskoj te utvrditi postoje li razlike između onih koji su

In accordance with these considerations, the second research question is defined.

Q2: Compare the guest perceptions of new technologies in upscale hotels in Italy and Croatia and observe whether there are differences between those who stayed in five-star properties and those who stayed in four-star ones.

New technologies have facilitated information management and effective data analysis (Piccoli, 2008), which is crucial for the development of both communication campaigns (Peltier et al., 2003) and loyalty programs (Shoemaker & Lewis, 1999; Palmer et al., 2000). The more information the company has about its customers, the more accurately it will be able to classify them. This also suggests that continuous analysis of data is needed to gain a better understanding of the customer at the individual level (Peltier et al., 2003). In this sense, Bunja (2003) pointed out that new management activities within the hotel sector of Croatia are needed urgently. Therefore, the third research question is:

Q3: Compare information management in upscale hotels in Italy and Croatia and observe whether there are differences between five-star and four-star properties.

It is well known that one of the main objectives of marketing activities is to increase consumer loyalty and to maintain permanent relationships with customers (Moliner et al., 2011). If the company effectively uses the collected information about the customers, it will provide them superior value and stimulate repeat purchase, thus encouraging customer loyalty (Shoemaker & Lewis, 1999; Minghetti, 2003; Palmer et al., 2000; Piccoli, 2008; Ruiz et al., 2010a). Moreover, satisfied loyal customers not only repeat purchase, but also make positive recommendations, which consequently attracts new customers (Veloutsou et al., 2005). According to these considerations, the fourth research question is defined:

Q4: Compare customer loyalty in upscale hotels in Italy and Croatia and observe whether there are differences between those

boravili u hotelima s pet i hotelima s četiri zvjezdice.

4. METODOLOGIJA

Empirijsko istraživanje u Italiji provedeno je tijekom lipnja i srpnja 2011. u 60 hotela (24 s pet zvjezdica i 36 s četiri zvjezdice). Od toga broja, 20 ih se nalazilo u sjevernoj Italiji (Veneto, Lombardija, Emilia Romagna i Trentino Alto-Adige), 34 u središnjoj Italiji (Toskana i Lacij, od čega 29 u Rimu) te šest u južnoj Italiji (Kampanija i Sardinija). Ispitano je ukupno 335 gostiju u 20 rimskih hotela: 105 ih je odsjelo u osam hotela s pet zvjezdica, a 230 u 12 hotela s četiri zvjezdice.

Empirijsko istraživanje u Hrvatskoj provedeno je tijekom travnja i svibnja 2010. u Dalmaciji, najvećoj od tri turističke regije na obali. Uzorak se sastojao od 17 dalmatinskih hotela (devet s pet zvjezdica i osam s četiri zvjezdice). Preciznije govoreći, 11 ih se nalazilo u području grada Splita (Split, Podstrana, Solin i Trogir), a šest u području grada Dubrovnika (Dubrovnik i Cavtat). Treba primijetiti da hrvatskim hotelima još uvijek upravlja osoblje koje se obrazovalo i zaposlilo u bivšim obrazovnim i gospodarskim sustavima. To znači da je hitno potrebno zaposliti nove djelatnike koji imaju potrebnu stručnost i sposobnost upravljanja poslovnim aktivnostima u skladu s međunarodnim standardima upravljanja i sadašnjim uvjetima na tržištu (Bunja, 2003; Šerić & Gil, 2011). Stoga je uzorak odabran na temelju povezanosti hotela s Udrugom hotelijera Splita i Dalmacije te tvrtke Marcon. Obje su ove ustanove inovatori i globalno relevantni hrvatski izvor znanja te su usredotočeni na promidžbu i razvoj turizma u tom području. Ukupno je intervjuirano 120 gostiju u 13 hotela: 68 ih je odsjelo u sedam hotela s pet zvjezdica, a 52 u šest hotela s četiri zvjezdice.

who stayed in five-star properties and those who stayed in four-star ones.

4. METHODOLOGY

The empirical study in Italy was carried out during June and July 2011 in 60 hotels (24 five-star and 36 four-star). Among them, 20 are located in Northern Italy (i.e., regions of Veneto, Lombardy, Emilia Romagna, and Trentino Alto-Adige), 34 in Central Italy (i.e., regions of Tuscany and Lazio, 29 of which in Rome) and six in Southern Italy (i.e., regions of Campania and Sardinia). A total number of 335 guests were interviewed in 20 hotels located in Rome: 105 of them stayed in eight five-star hotels, while 230 stayed in 12 four-star hotels.

The empirical study in Croatia was conducted during April and May 2010 in the region of Dalmatia, which is the largest of the three tourist regions on the coast of the country. The census consisted of 17 Dalmatian hotels (nine five-star and eight four-star). In particular, 11 are located in the Split city area (i.e., Split, Podstrana, Solin, and Trogir) and six in the Dubrovnik city area (i.e., Dubrovnik and Cavtat). It should be noted that the Croatian hotel sector is still mainly managed by the personnel employed in the former economic and educational systems, which leads to an urgent need to engage new employees who have the necessary expertise and are capable of managing the business activities according to international management standards and present market conditions (Bunja, 2003; Šerić & Gil, 2011). Therefore, a census was selected on the basis of the hotels' connection to the Association of Hoteliers of Split and Dalmatia and the firm Marcon, both innovators and globally relevant Croatian sources of know-how, focused on the promotion and development of tourism in the area. Similarly, hotels in the Dubrovnik city area were approached. A total number of 120 guests were interviewed in 13 hotels: 68 stayed in seven five-star hotels, while 52 guests stayed in six four-star hotels.

Podaci su prikupljeni pomoću dva strukturirana upitnika: jedan za hotelske menadžere, a drugi za goste. Inicijalna verzija upitnika za menadžere preliminarno je testirana na dva hotelska menadžera te je naknadno skraćena kako bi se smanjilo trajanje intervjua. Konačna je verzija uglavnom poslužila kao osnova intervjua (u dva su se hotela proveli telefonski intervjui, a u još dva ispitanici su sami odgovarali na pitanja iz upitnika). Ispitanici su uglavnom bili generalni menadžeri hotela ili marketinški menadžeri. Inicijalna verzija upitnika za goste također je skraćena nakon preliminarnog testiranja na uzorku od deset osoba koje su nedavno boravile u hotelu. Dio ispitanika sam je ispunio konačnu verziju upitnika dok su ostali bili intervjuirani. Oba upitnika sastojala su se od zatvorenih pitanja s Likert skalom od 1 do 5 te su bili napisani na engleskom, talijanskom, hrvatskom i španjolskom. Upitnike su preveli stručnjaci koji dobro vladaju engleskim i talijanskim te izvorni govornici hrvatskog i španjolskog. Prilikom prevođenja načinjene su određene prilagodbe kako bi svaka verzija upitnika bila u skladu s relevantnom kulturom. Tom se prilikom vodila briga o koherentnosti sva četiri upitnika.

Kako bi se mogla izmjeriti razina implementacije ICT rješenja iz menadžerske perspektive, prilagodili smo i upotrijebili skalu koju su predložili Ruiz i suradnici (2011): a) 17 elemenata za ocjenjivanje hotelskog *hardware-a*; b) pet elemenata za ocjenu veze; c) sedam se odnosilo na programsku opremu; a d) 12 na ICT opremu za uslugu gostima tijekom njihova boravka u hotelu. Kako bismo ocijenili percepciju novih tehnologija od strane gostiju, prilagodili smo i upotrijebili četiri stavke iz skale koju su predložili Gil i Ruiz (2009). Izmjereni su sljedeći aspekti: a) hotelske investicije u tehnologiju; b) najnoviji tehnološki trendovi; c) naprednija tehnologija u usporedbi s drugim hotelima; i d) unapređenje ICT-a prema mišljenjima gostiju.

Upravljanje podacima ocijenjeno je na skali koju su predložili Palmer i suradnici

The data were collected through two structured questionnaires: one created for hotel managers and another created for guests. The initial version of the managers' questionnaire was pre-tested on two hotel managers and was reduced subsequently in order to shorten its duration. The final version was mainly administered through personal interviews (in two hotels it was administered through telephone interviews, whereas in another two hotels it was self-administered). The respondents were mainly hotel general managers and marketing managers. The initial version of the guests' questionnaire was also reduced after being pre-tested on ten individuals who have recently stayed in the hotel. The final version of the questionnaire was partially self-administered and partially administered through personal interviews. Both questionnaires consisted of closed questions measured by 5-point Likert type scales and were written in English, Italian, Croatian, and Spanish by experts fluent in English and Italian and native in Croatian and Spanish. Some adjustments were made in order to adapt each version of the questionnaire to respective culture, preserving coherence throughout all four of them.

In order to measure the implementation of ICT solutions from the manger perspective, the adapted scale proposed by Ruiz et al. (2011) was used: a) 17 items assessed hotels' hardware equipment; b) five measured connection; c) seven applied to software equipment; and d) 12 items evaluated ICT equipment for guest service during his/her stay in the hotel. In order to assess guest perceptions of new technologies, four items of the scale proposed by Gil and Ruiz (2009) were used, after being adapted to the hotel sector. Thus, the following ICT aspects were measured: a) hotel's investments in technology; b) latest trend technology; c) more advanced technology compared to other hotels; and d) consideration of guest opinion for ICT improvement.

On the other hand, information management was assessed through the scale

(2000) pomoću 10 čestica za mjerenje intenziteta podataka. Konačno, lojalnost klijenata izmjerena je pomoću sljedećih šest čestica iz skale koju su razvili Kim i Kim (2005): a) učestalost posjeta; b) namjera povratka; c) prvi izbor; d) zadovoljstvo; d) namjera da preporuče hotel; i f) namjera da promijene hotel.

5. REZULTATI

Podaci su podvrgnuti deskriptivnoj statistici i neparametrijskim testovima pomoću SPSS programa (verzija 19). Prilikom usporedbe talijanskih i hrvatskih hotela iz perspektive menadžera i gostiju napravljen je Kolmogorov-Smirnov test kako bi se provjerio normalitet distribucije podataka. Podaci su pokazali da se podaci ne distribuiraju normalno jer su gotovo sve stavke imale kritičnu vrijednost nižu od ,05. Stoga je proveden Mann-Whitney U test za usporedbu dva neovisna uzorka jer je to neparametrijska metoda koja se može primijeniti kada podaci nemaju normalnu distribuciju. Ovim je testom utvrđena statistička značajnost utvrđenih razlika između usporednih uzoraka (Corder & Foreman, 2009).

Iz menadžerske perspektive, rezultati su otkrili relativno visok stupanj primjene ICT-a u hotelima visoke kategorije u obje zemlje. Ipak, kao što je vidljivo iz tablice 2, hrvatski hoteli pokazuju bolju izvedbu implementacije ICT-a, posebno što se tiče većine stavki o *hardware-u* (npr. PC kompjuteri, prijenosna računala, sustavi sigurnosnih kopija, osobni digitalni pomoćnici, digitalni telefoni (IPT), mobilni telefoni, digitalne kamere, zasloni na dodir, DVD, elektroničke blagajne, elektronički sustavi prodaje i automatizirani sustavi) i *software-u* (npr. programi za automatizaciju ureda, oblikovanje programa za sustave internetske sigurnosti, informatički sustavi za izdavanje računa i analizu podataka). Štoviše, Mann-Whitney U test pokazuje da postoje značajne razlike između talijanskih i hrvatskih vrhunskih

proposed by Palmer et al. (2000), using 10 items to measure information intensity. Finally, customer loyalty was measured using the following six items of Kim and Kim's (2005) scale: a) visit frequency; b) intention to return; c) the first choice; d) satisfaction; e) intention to recommend; and f) intention to change.

5. RESULTS

Descriptive statistics and nonparametric tests were carried out for data analysis, using SPSS software (version 19). When comparing Italian and Croatian hotels from both manager and guest perspectives, the Kolmogorov-Smirnov test was first performed in order to check the normality of data distribution. The results showed that the data were not normally distributed, as almost all items had critical values lower than .05. Therefore, the Mann-Whitney U test was completed, comparing two independent samples, as it is a nonparametric method that should be performed when data do not show normal distribution. This test was used to determine whether the obtained differences between the two compared samples are statistically significant (Corder & Foreman, 2009).

From the manager perspective, the results reveal a relatively high degree of ICT implementation in upscale hotels located in both countries. However, as depicted in Table 2, Croatian hotels show a better performance of ICT implementation, especially of most of the items related to the hardware dimension (e.g., PC computers, laptops, security copy systems, personal digital assistants, digital telephones, mobile telephones, digital cameras, touch screens, DVD, electronic cash registers, point of sale systems, and home automation systems) and the software dimension (e.g., office automation programs, design programs, web security systems, informatics invoicing systems, and information analysis). Moreover, the Mann-Whitney U test shows that there are significant differ-

hotela u vezi korištenja nekih hardverskih i programskih stavki, odnosno njihove su *p* vrijednosti niže od ,05. To se odnosi na korištenje prijenosnih računala, personalne digitalne asistente, mobilne telefone, elektronske blagajne (bolji rezultati u hrvatskim hotelima) i telefonskoj razmjeni, DTT i simulatori (s boljim rezultatima u talijanskim hotelima).

Čini se da talijanski hoteli bolje primjenjuju sve oblike veza (npr. internetsku vezu, lokalnu računalnu mrežu; Wi-Fi i Bluetooth), osim Worldwide Interoperability for Microwave Access (WiMAX), koji se čini prisutnijim u hrvatskim hotelima. Ipak, Mann-Whitney U test potvrđuje postojanje statistički značajne razlike samo što se tiče lokalne računalne mreže.

Što se tiče opreme kojom se mogu služiti gosti tijekom boravka u hotelu (tablica 3), talijanski hoteli koriste više LCD-a i zaslona koji reagiraju na dodir, DDT-a, interaktivne televizije, stereo uređaja u sobama, analognih telefona i ambijentalne inteligencije. Nasuprot tome, hrvatski hoteli skloniji su koristiti druge ICT aplikacije: video nadzor, satelitsku digitalnu televiziju, kablovsku televiziju, DVD u sobama i digitalne telefone. Mann-Whitney U test otkriva značajne razlike u pogledu korištenja LCD ekrana, DTT-a, analognih i digitalnih telefona.

Različiti rezultati dobiveni su samo prilikom usporedbe hotela s pet zvjezdica u obje zemlje. Talijanski hoteli s pet zvjezdica pokazuju bolju ICT performansu jer imaju višu srednju vrijednost za većinu stavaka koje se odnose na hardver (npr. Sustavi sigurnosnih kopija, digitalni telefoni, fax, telefonska razmjena, digitalne kamere, LCD zasloni, DTT, DVD i automatizirani sustavi). Ipak, prema Mann-Whitney U testu statistički su značajne samo razlike u korištenju telefonske razmjene i DTT-a. Nasuprot tome, uporaba prijenosnih računala, personalnih digitalnih asistenata i elektronskih kasa imaju više rezultate u hrvatskim hotelima s pet zvjezdica. Unatoč tome, zapaženo je

ences between Italian and Croatian upscale hotels regarding the use of some hardware and software items, as their *p* values are lower than .05. This refers to the use of laptops, personal digital assistants, mobile telephones, electronic cash registers (performing better in Croatian hotels), and telephone exchange, Digital Terrestrial TV (DTT), and simulators (showing better results in Italian hotels).

However, Italian hotels seem to implement all of the connection items better (e.g., Internet connection, local area connection with cable, Wi-Fi, and Bluetooth), except for the Worldwide Interoperability for Microwave Access (WiMAX) item, which seems to be slightly more adopted in Croatian hotel properties. Nevertheless, the Mann-Whitney U test confirms a statistically significant difference only for the local area connection with cable item.

Regarding equipment for guest service during his/her stay in the hotel (Table 3), Italian hotels employ more of the following facilities: LCD and touch screens, DTT, interactive TV, stereos in rooms, analog telephones, and ambient intelligence. In contrast, Croatian hotels show a greater propensity to adopt other ICT applications, such as: video surveillance, satellite digital TV, cable TV, DVD in rooms, and digital telephones. The Mann-Whitney U test reveals significant differences regarding the use of LCD screens, DTT, analog telephones, and digital telephones.

Different results are obtained when comparing only five-star properties in both countries. Italian five-star hotels show a better ICT performance, having greater mean values of most of the hardware items (e.g., security copy systems, digital telephones, fax, telephone exchange, digital cameras, LCD screens, DTT, DVD, and home automation systems). However, according to the Mann-Whitney U test, these differences are statistically significant only regarding the use of telephone exchange and DTT. On the other hand, the use of laptops, personal digital assistants, and electronic cash registers shows significantly higher scores in Croatian five-star hotels. Nevertheless, more differences

više razlika između talijanskih i hrvatskih hotela s pet zvjezdica u primjeni druge tri ICT dimenzije. Tako u talijanskim hotelima imamo bolje rezultate za sve stavke koje se odnose na programe i opremu kojom se služe gosti hotela. Samo dvije stavke za programsku podršku (npr. programi za automatizaciju ureda i informatički sustavi izdavanja računa) te dvije stavke koje se odnose na opremu kojom se služe gosti hotela (npr. satelitska digitalna televizija i digitalni telefoni) imaju više rezultate u hrvatskim hotelima. Rezultati Mann-Whitney U testa otkrivaju značajne razlike u korištenju simulatora, DTT-a, i analognih telefona u talijanskim hotelima s pet zvjezdica te u korištenju digitalnih telefona u hrvatskim hotelima.

Usporedbom hotela s četiri zvjezdice dobiveni su slični rezultati. Hrvatski hoteli s četiri zvjezdice pokazuju viši stupanj primjene većine ICT rješenja, posebno što se tiče dimenzije *hardvera* i *softvera*. Međutim, značajne razlike nalazimo samo za korištenje *hardwara*, posebice mobilnih telefona i elektroničkih blagajni, pri čemu su hrvatski hoteli s četiri zvjezdice imali bolje rezultate, dok su talijanski imali više rezultate za telefonsku razmjenu podataka. Nadalje, što se tiče veza i opreme koje su na raspolaganju gostima, statistički značajno se razlikuju samo talijanski i hrvatski hoteli s četiri zvjezdice. Internetske veze, lokalna računalna mreža, DDT, digitalni telefoni i ambijetalna inteligencija imali su značajno više rezultate u talijanskim hotelima s četiri zvjezdice dok su hrvatski hoteli imali značajno više rezultate za WiMAX, kablovsku televiziju i digitalne telefone.

Ipak, iz perspektive gostiju čini se da je razina prisutnosti nove tehnologije nešto umjerenija. Gosti koji su boravili u hrvatskim hotelima bolje su percipirali sve nove tehnološke stavke (npr. hotelska ulaganja u tehnologiju, najnovije tehnološke trendove, napredniju tehnologiju u odnosu na druge hotele te koliko hotel drži do mišljenja gostiju o unapređenju ICT-a). Prema rezultati-

between Italian and Croatian five-star hotels are observed regarding the adoption of the other three ICT dimensions. Thus, all connection items and almost all software and equipment for guest service items perform better in Italian hotels. Only two software items (e.g., office automation programs and informatics invoicing systems) and two items related to equipment for guest service during his/her stay (e.g., satellite digital TV and digital telephones) have higher scores in Croatian hotels. The results of the Mann-Whitney U test reveal significant differences regarding the major use of simulators, DTT, and analog telephones in Italian five-star properties, and digital telephones in Croatian ones.

When comparing only four-star properties, similar results are obtained as when comparing all upscale hotels. Croatian four-star hotels show a higher degree of implementation of most of the ICT facilities, especially of the hardware and software dimensions. However, significant differences are found only regarding the use of hardware, specifically of mobile telephones and electronic cash registers, with a better performance in Croatian four-star hotels and telephone exchange, with higher scores in Italian ones. Furthermore, statistically significant differences between Italian and Croatian four-star hotels are observed regarding the connection and the equipment for guest service dimensions. Internet connection, local area connection with cable, DTT, analog telephones, and ambient intelligence have significantly higher scores in Italian, while WiMAX, cable TV, and digital telephones perform significantly better in Croatian four-star hotels.

However, the results show a more moderate degree of new technologies when analyzed from the guest perspective. Guests who stayed in Croatian hotels perceive all of the new technology items better (e.g., hotel's investments in technology, latest trend technology, more advanced technology compared to other hotels, and consideration of guest opinion for ICT improvement). According to the results of the Mann-Whitney U test, all

Tablica 4: Deskriptivna statistika i Mann-Whitney U test: Percepcija novih tehnologija u talijanskim i hrvatskim hotelima – perspektiva gosta

STAVKE ZA NOVE TEHNOLOGIJE	ITALIJA		HRVATSKA		U TEST		ITA	CRO	U TEST		ITA	CRO	U TEST	
	N=335		N=120				N=105	N=68			N=220	N=52		
	Mean	SD	Mean	SD	U	p	Mean 5*		U	p	Mean 4*		U	p
1. Hotelske investicije u tehnologiju	3,30	1,082	3,77	,786	15138,0	,000*	3,93	3,96	3495,0	,807	3,02	3,52	4211,5	,000*
2. Najnoviji tehnološki trendovi	2,86	1,216	3,56	,742	12900,0	,000*	3,89	3,60	2962,0	,048*	2,40	3,50	2283,0	,000*
3. U usporedbi s drugim hotelima naprednija tehnologija	2,67	1,090	3,39	1,079	13094,5	,000*	3,50	3,69	3263,0	,316	2,29	3,00	3793,0	,000*
4. Razmatranje mišljenja gostiju prilikom unapređenja ICT-a	3,22	,928	3,53	,987	16719,0	,004*	3,67	3,76	3362,0	,491	3,02	3,23	5328,0	,192

Table 4: Descriptive statistics and Mann-Whitney U test: New technologies perception in Italian and Croatian hotels – guest perspective

NEW TECHNOLOGIES ITEMS	ITALY		CROATIA		U TEST		ITA	CRO	U TEST		ITA	CRO	U TEST	
	N=335		N=120				N=105	N=68			N=220	N=52		
	Mean	SD	Mean	SD	U	p	Mean 5*		U	p	Mean 4*		U	p
1. Hotel's investments in technology	3.30	1.082	3.77	.786	15138.0	.000*	3.93	3.96	3495.0	.807	3.02	3.52	4211.5	.000*
2. Latest trend technology	2.86	1.216	3.56	.742	12900.0	.000*	3.89	3.60	2962.0	.048*	2.40	3.50	2283.0	.000*
3. More advanced technology compared to other hotels	2.67	1.090	3.39	1.079	13094.5	.000*	3.50	3.69	3263.0	.316	2.29	3.00	3793.0	.000*
4. Consideration of guest opinion for ICT improvement	3.22	.928	3.53	.987	16719.0	.004*	3.67	3.76	3362.0	.491	3.02	3.23	5328.0	.192

ma Mann-Whitney U testa sve zabilježene razlike bile su statistički značajne (tabela 4). Rezultati su slični ako usporedimo mišljenja gostiju koji su boravili u hotelima s četiri zvjezdice. Međutim, razina razlike u brizi za mišljenje gostiju o unapređenju ICT-a nije značajna. Što se tiče hotela s pet zvjezdica, gosti koji su boravili u talijanskim hotelima bolje su ocijenili najnovije tehnološke trendove. Ovo je jedina statistički značajna razlika. Ostale tri stavke dobile su više ocjene u hrvatskim hotelima s pet zvjezdica.

Rezultati istraživanja otkrivaju da je upravljanje podacima na umjerenom stupnju i u talijanskim i u hrvatskim vrhunskim hotelima (tablica 5). Ipak, deskriptivna statistička analiza pokazuje više razine primjene obje stavke u hrvatskim hotelima, posebice u onima u kojima se ocjenjuje svrha uporabe podataka (npr. da bi se generirali novi klijenti, da bi se zadržali postojeći klijenti, da bi se povećala potrošnja po klijentu, da bi se hotelska usluga prilagodila željama i potrebama klijenata te da bi se pružila personalizirana usluga). Nadalje, hrvatski hoteli bolje ispituju agregirano korištenje programa lojalnosti i primjenjuju više kriterija pri isključivanju klijenata iz programa lojalnosti, dok talijanski hoteli bolje analiziraju socio-ekonomske karakteristike i one koje se odnose na životni stil, kao i uzorke potrošnje pojedinih klijenata. Međutim, prema Mann-Whitney U testu značajne razlike postoje samo u pogledu analize karakteristika životnog stila klijenata (u korist talijanskih hotela), primjene kriterija za isključivanje klijenata iz programa lojalnosti, korištenja podataka za generiranje novih klijenata te korištenja podataka kako bi se hotelske usluge prilagodile željama i potrebama klijenata (u korist hrvatskih hotela).

Slični rezultati dobiveni su prilikom usporedbe hotela s četiri zvjezdice u dvije zemlje. Statistički značajne razlike zabilježene su samo u pogledu kriterija za isključivanje klijenata iz programa lojalnosti i korištenje podataka za generiranje novih klijenata, oboje u korist hrvatskih hotela.

of the obtained differences are statistically significant (Table 4). The results are similar when comparing the evaluations of guests who stayed in four-star hotels. Nevertheless, in this case the difference in the consideration of guest opinion for ICT improvement is not significant. In the case of five-star hotels, guests who stayed in Italian hotel properties evaluate the latest trend technology better. This difference is the only one that is statistically significant. The other three items obtain grater scores in Croatian five-star hotels.

The findings of this study reveal a more moderate degree of information management in both Italian and Croatian upscale hotels (Table 5). However, descriptive statistical analysis shows a higher adoption of most of the items in the case of Croatian hotels, especially of those that evaluate the purpose of the information use (e.g., to generate new customers, retain the existing ones, increase customers' expenditure, tailor offers to customers' preferences, and provide personalized services). Furthermore, Croatian hotels better examine the aggregate usage of the loyalty programs and implement more criteria for dropping customers from the loyalty programs, while Italian hotels better analyze customers' socio-economic and lifestyle characteristics, as well as the spending patterns of individual customers. However, according to the Mann-Whitney U test, significant differences are found regarding the analysis of customers' lifestyle characteristics (in favor of Italian hotels), implementation of criteria for dropping customers from the loyalty programs, use of information to generate new customers, and use of information to tailor offers to customers' preferences (in favor of Croatian hotels).

Similar results were obtained when comparing four-star properties located in both countries. Statistically significant differences are found only regarding the criteria for dropping customers from the loyalty programs and the use of information to generate new customers, both in favor of Croatian hotels.

Tablica 5: ***Deskriptivna statistika i Mann-Whitney U test: Upravljanje podacima u talijanskim i hrvatskim hotelima – perspektiva menadžera***

STAVKE ZA UPRAVLJANJE PODACIMA		ITALIJA N=60		HRVATSKA N=17		U TEST		ITA N=24	CRO N=9	U TEST		ITA N=36	CRO N=8	U TEST	
		Mean	SD	Mean	SD	U	p	Mean 5*		U	p	Mean 4*		U	p
INTENZITET PODATAKA	1. Analiza socio-ekonomskih obilježja klijenata	3,88	1,236	3,53	1,231	415,5	,225	3,92	3,44	79,0	,216	3,86	3,63	127,0	,589
	2. Analiza obilježja životnog stila klijenata	4,42	,696	3,41	1,228	245,0	,000*	4,63	3,33	31,5	,001*	4,28	3,50	97,5	,109
	3. Analiza uzorka potrošnje pojedinih klijenata	3,97	1,134	3,71	1,160	433,5	,314	3,67	3,78	103,5	,849	4,17	3,63	112,0	,274
	4. Analiza agregirane uporabe programa lojalnosti	3,35	1,921	3,53	1,419	507,5	,973	3,63	3,56	96,5	,614	3,17	3,50	134,5	,749
	5. Kriteriji za ispuštanje klijenata iz programa lojalnosti	1,38	1,075	2,53	1,546	284,0	,000*	1,96	2,56	85,0	,290	1,00	2,50	54,0	,000*
	6. Korištenje podataka za privlačenje novih klijenata	3,50	1,501	4,47	,717	329,0	,019*	4,17	4,33	106,0	,930	3,06	4,63	61,5	,009*
	7. Korištenje podataka u svrhu zadržavanja klijenata	4,57	,810	4,71	,470	509,0	,987	4,83	4,56	75,5	,065	4,39	4,88	112,5	,216
	8. Korištenje podataka u svrhu povećanja potrošnje	3,35	1,745	4,29	,772	392,5	,127	3,29	4,22	83,0	,292	3,39	4,38	105,0	,202
	9. Korištenje podataka u svrhu prilagodbe usluga željama I potrebama klijenata	3,32	1,621	4,29	,772	353,0	,043*	3,54	4,33	79,0	,219	3,17	4,25	96,0	,124
	10. Korištenje podataka u svrhu pružanja personaliziranih usluga	3,78	1,585	4,24	,752	493,0	,821	4,17	4,22	107,0	,965	3,53	4,25	130,0	,637

Table 5: ***Descriptive statistics and Mann-Whitney U test: Information management in Italian and Croatian hotels – manager perspective***

INFORMATION MANAGEMENT ITEMS		ITALY N=60		CROATIA N=17		U TEST		ITA N=24	CRO N=9	U TEST		ITA N=36	CRO N=8	U TEST	
		Mean	SD	Mean	SD	U	p	Mean 5*		U	p	Mean 4*		U	p
INFORMATION INTENSITY	1. Analysis of customers' socio-economic characteristics	3.88	1.236	3.53	1.231	415.5	.225	3.92	3.44	79.0	.216	3.86	3.63	127.0	.589
	2. Analysis of customers' lifestyle characteristics	4.42	.696	3.41	1.228	245.0	.000*	4.63	3.33	31.5	.001*	4.28	3.50	97.5	.109
	3. Analysis of the spending patterns of individual customers	3.97	1.134	3.71	1.160	433.5	.314	3.67	3.78	103.5	.849	4.17	3.63	112.0	.274
	4. Analysis of aggregate usage of the loyalty programs	3.35	1.921	3.53	1.419	507.5	.973	3.63	3.56	96.5	.614	3.17	3.50	134.5	.749
	5. Criteria for dropping customers from the loyalty program	1.38	1.075	2.53	1.546	284.0	.000*	1.96	2.56	85.0	.290	1.00	2.50	54.0	.000*
	6. Use of information to generate new customers	3.50	1.501	4.47	.717	329.0	.019*	4.17	4.33	106.0	.930	3.06	4.63	61.5	.009*
	7. Use of information to retain customers	4.57	.810	4.71	.470	509.0	.987	4.83	4.56	75.5	.065	4.39	4.88	112.5	.216
	8. Use of information to increase customers' expenditure	3.35	1.745	4.29	.772	392.5	.127	3.29	4.22	83.0	.292	3.39	4.38	105.0	.202
	9. Use of information to tailor offers to customers' preferences	3.32	1.621	4.29	.772	353.0	.043*	3.54	4.33	79.0	.219	3.17	4.25	96.0	.124
	10. Use of information to provide personalized services	3.78	1.585	4.24	.752	493.0	.821	4.17	4.22	107.0	.965	3.53	4.25	130.0	.637

Konačno, prilikom usporedbe upravljanja podacima samo za hotele s pet zvjezdica utvrdili smo da hrvatski hoteli imaju bolje rezultate. Ipak, jedino je rezultat za analizu karakteristika životnog stila klijenata bio statistički značajno bolji u talijanskim hotelima s pet zvjezdica.

Što se tiče lojalnosti klijenata, i gosti talijanskih i gosti hrvatskih hotela izrazili su visoku razinu zadovoljstva i namjeru da hotel preporuče drugima. Nešto viši rezultati zabilježeni su za hrvatske hotele (tablica 6). Mann-Whitney U test pokazao je da postoje statistički značajne razlike za četiri od šest stavki (npr. učestalost posjeta, prvi izbor, zadovoljstvo, namjera da se hotel preporuči drugima). Talijanski su hoteli imali više rezultate samo za namjeru gosta da se vrati u hotel. Prilikom usporedbe hotela s četiri i pet zvjezdica dobiveni su drugačiji rezultati. Gosti talijanskih hotela s pet zvjezdica pokazuju izraženiju namjeru da se vrate, češće posjećuju hotel kao mjesto prvog izbora te je manje vjerojatno da će sljedeći puta izabrati drugi hotel. Nasuprot tome, gosti hrvatskih hotela s pet zvjezdica navode veću učestalost posjeta, višu razinu zadovoljstva i snažniju namjeru da hotel preporuče drugima. Statistički značajnima su se pokazale razlike za prvi izbor i zadovoljstvo. Konačno, čini se vjerojatnijim da će se gosti talijanskih hotela s četiri zvjezdice vratiti u hotel, preporučiti ga drugima te neće promijeniti hotel, dok su gosti hrvatskih hotela s četiri zvjezdice zadovoljniji, posjećuju hotel redovitije te ga smatraju svojim prvim odabirom. Razlike su statistički značajne samo što se tiče stavki koje daju prednost hrvatskim hotelima.

Finally, when comparing information management only in five-star hotels, Croatian hotel properties perform better. Nevertheless, only the difference regarding the analysis of customers' lifestyle characteristics seems to be statistically significant, with higher scores in Italian five-star hotels.

With respect to customer loyalty, guests who stayed in both Italian and Croatian hotels show high satisfaction and intention to recommend the hotel. Still, greater scores are observed in the case of Croatian hotels (Table 6). Specifically, the Mann-Whitney U test shows statistically significant differences regarding four of six items (e.g., visit frequency, the first choice, satisfaction, and intention to recommend). Only intention to return reaches higher scores in Italian hotels. Different results are obtained when comparing five-star and four-star hotels separately. Guests who stayed in Italian five-star hotels show a greater intention to return, use the visited hotel more as their first choice, and are less likely to change it the next time. In contrast, guests who stayed in Croatian five-star hotels report higher visit frequency, are more satisfied, and have a greater intention to recommend the hotel. Differences observed regarding the first choice and satisfaction are found to be significant. Finally, guests in Italian four-star hotel properties seem to be more likely to return and recommend the hotel and less likely to change it, while those staying in Croatian four-star hotels are more satisfied, visit the hotel more regularly, and consider it as their first choice. Differences are statistically significant only in favor of Croatian four-star hotels.

Tablica 6: ***Deskriptivna statistika i Mann-Whitney U test: Lojalnost klijenata u talijanskim i hrvatskim hotelima – perspektiva gosta***

STAVKE ZA LOJALNOST KLIJENATA	ITALIJA		HRVATSKA		U TEST		IT	HR	U TEST		IIT	HHR	U TEST	
	N=335		N=120				N=105	N=68			N=220	N=52		
	Mean	SD	Mean	SD	U	p	Mean 5*		U	p	Mean 4*		U	p
1. Učestalost posjeta	1,61	1,269	2,65	1,586	12544,5	,000*	2,70	2,93	3313,5	,404	1,12	2,29	3216,5	,000*
2. Namjeravani povratak	3,68	1,243	3,60	1,458	20034,5	,956	4,36	4,01	3108,5	,106	3,37	3,06	5317,0	,196
3. Prvi izbor	2,17	1,586	3,04	1,492	13816,0	,000*	3,99	3,40	2712,0	,005*	1,33	2,58	28255,0	,000*
4. Zadovoljstvo	4,09	1,031	4,65	,513	14023,0	,000*	4,50	4,82	3050,0	,033*	3,90	4,42	4348,0	,001*
5. Namjera da daju preporuku	3,95	1,230	4,20	1,199	17286,0	,014*	4,51	4,68	3453,0	,634	3,70	3,58	5901,5	,878
6. Namjera da promjene hotel	3,71	1,302	3,78	1,361	19063,0	,382	4,34	4,18	3212,5	,196	3,43	3,27	5650,0	,522

Table 6: ***Descriptive statistics and Mann-Whitney U test: Customer loyalty in Italian and Croatian hotels – guest perspective***

CUSTOMER LOYALTY ITEMS	ITALY		CROATIA		U TEST		ITA	CRO	U TEST		ITA	CRO	U TEST	
	N=335		N=120				N=105	N=68			N=220	N=52		
	Mean	SD	Mean	SD	U	p	Mean 5*		U	p	Mean 4*		U	p
1. Visit frequency	1.61	1.269	2.65	1.586	12544.5	.000*	2.70	2.93	3313.5	.404	1.12	2.29	3216.5	.000*
2. Intention to return	3.68	1.243	3.60	1.458	20034.5	.956	4.36	4.01	3108.5	.106	3.37	3.06	5317.0	.196
3. The first choice	2.17	1.586	3.04	1.492	13816.0	.000*	3.99	3.40	2712.0	.005*	1.33	2.58	28255.0	.000*
4. Satisfaction	4.09	1.031	4.65	.513	14023.0	.000*	4.50	4.82	3050.0	.033*	3.90	4.42	4348.0	.001*
5. Intention to recommend	3.95	1.230	4.20	1.199	17286.0	.014*	4.51	4.68	3453.0	.634	3.70	3.58	5901.5	.878
6. Intention to change	3.71	1.302	3.78	1.361	19063.0	.382	4.34	4.18	3212.5	.196	3.43	3.27	5650.0	.522

6. ZAKLJUČCI, IMPLIKACIJE I TEME ZA BUDUĆA ISTRAŽIVANJA

Ovo istraživanje ima za cilj pridonijeti istraživanjima koja se bave ICT-om i upravljanjem podacima u vrhunskim talijanskim i hrvatskim hotelima. Rezultati deskriptivne analize pokazali su da postoji relativno visok stupanj primjene većine ICT stavki te nešto umjereniji stupanj upravljanja podacima. Nadalje, iz perspektive gostiju stavke za nove tehnologije postigle su niže rezultate. Osim toga, neke stavke za lojalnost klijenata pokazuju dobre rezultate u obje zemlje.

Utvrđene su neke razlike između talijanskih i hrvatskih hotela. Hrvatski hoteli imaju bolje rezultate za većinu stavki za ICT i upravljanje podacima, kao i za bolju percepciju novih tehnologija i lojalnost gostiju. Ipak, neparametrijski Mann-Whitney U test otkriva da su ove razlike statistički značajne kako za talijanske tako i za hrvatske visokokategorizirane hotele.

Rezultati ovog istraživanja imaju važne implikacije za hotelske tvrtke. Vjerujemo da bi hotelski menadžeri trebali obratiti pažnju na primjenu novih tehnologija jer njihova strateška uporaba predstavlja jednu od glavnih prilika u suvremenoj hotelskoj industriji. Ovo jednako vrijedi za talijanske i hrvatske hotele jer je usprkost relativno visokom stupnju primjene ICT-a koju navode menadžeri, percepcija nove tehnologije od strane gostiju tek umjerena. Kako je percepcija klijenata od kritične važnosti za odluke o ulaganju u hotele, hotelski menadžeri bi trebali ozbiljno promotriti ove rezultate. Nadalje, kako bi učinkovito odgovorili na potrebe tržišta, menadžeri bi trebali prepoznati vrijednost upravljanja podacima i iskoristiti ga za poticanje lojalnosti klijenata. Iako je naša studija pokazala relativno visoke rezultate za zadovoljstvo i namjeru da se hotel preporuči i drugima u oba uzorka, talijanskom i hrvatskom, učestalost posjeta i doživljaj hotela kao prvog izbora prilično su niski. Kako bi

6. CONCLUSION, IMPLICATIONS, AND FUTURE RESEARCH POSSIBILITIES

This study aims to contribute to ICT and information management research in Italian and Croatian upscale hotels. The results of descriptive statistical analysis demonstrate a relatively high degree of implementation of most of the ICT items and a more moderate degree of information management. Moreover, when analyzed from the guest perspective, new technology items reach lower scores. In addition, some items of customer loyalty show good results in both countries.

Some differences are found between Italian and Croatian hotel properties. Croatian hotels show a better performance of most of the ICT and information management items, as well as a greater guest perception of new technologies and loyalty. However, the nonparametric Mann-Whitney U test reveals that these differences are statistically significant in favor of both Italian and Croatian upscale hotels.

The findings of this study have important implications for hotel companies. We believe that hotel managers should pay their attention to the implementation of new technologies, as their strategic use represents one of the main opportunities for the hotel industry at present. This refers to both Italian and Croatian hotels, because despite the relatively high degree of ICT implementation reported by managers, guests do perceive moderately new technologies. Since consumer perceptions are critical to hotel investment decisions, hotel managers should seriously consider these findings. Furthermore, in order to respond efficiently to market requirements, managers should recognize the value of information management and consider it as an incentive to customer loyalty. Although the results of this study show relatively high scores of satisfaction and intention to recommend in both Italian and Croatian hotels, visit frequency and consideration of the visited hotel as the first choice are rather low.

se postigli bolji rezultati, menadžeri bi trebali učinkovito prikupljati, pohranjivati i analizirati podatke o klijentima. To će im omogućiti da bolje razumiju svoje klijente, pruže im prilagođene, a ne standardizirane usluge i potaknu njihovu lojalnost. Kao što su primijetili Palmer i suradnici (2000), ako intenzitet podataka i prilagođene usluge dosegnu visoku razinu, vjerojatno će lojalnost klijenata počivati i na stavovima i na ponašanju klijenata te dovesti do njihove "stvarne" lojalnosti.

Pogotovo bi talijanski vrhunski hoteli trebali razmotriti sve ove aspekte jer hrvatski hoteli, prema ovim rezultatima, imaju bolje rezultate za ICT i upravljanje podacima. Nadalje, gosti hrvatskih hotela bolje percipiraju nove tehnologije i izražavaju veću lojalnost. Ovaj rezultat iznenađuje jer je pri usporedbi turističkog odredišta u nastajanju (npr. Hrvatska) i dobro poznatog turističkog odredišta (npr. Italija) za očekivati bolje rezultate za dobro poznato odredište. Ipak, moguće je da je ovaj rezultat posljedica činjenice da poznata turistička odredišta imaju hotele s dugogodišnjom tradicijom te stoga pokazuju svojevrsnu inerciju prema uvođenju novih tehnologija. Nasuprot tome, u turističkim destinacijama u nastajanju moglo bi djelovati više novih hotela koji posjeduju najnaprednija ICT rješenja.

Ova studija sadrži i neka ograničenja koja se mogu promatrati i kao teme za buduća istraživanja. Relativno mali broj hrvatskih hotela glavno je ograničenje jer se radi o manjem uzorku gostiju. Treba primijetiti i da Hrvatska u cijelosti, a Dalmacija posebice, imaju mali broj vrhunskih hotela. Nadalje, zbog karakteristika hrvatskog hotelskog sektora ova se studija usredotočila samo na one vrhunske hotele u Dalmaciji koji surađuju s Udrugom hotelijera Dalmacije i tvrtkom Marcon. Talijanski hotelski cenzus uključio je veoma mali broj hotela na jugu zemlje (samo 10%), koji zaostaje za središnjom i sjevernom Italijom u pogledu razvoja i ka-

In order to accomplish better results, mangers should effectively collect, store, and analyze information about customers. This will enable them to understand their clients better, provide them customized, rather than standardized services, and encourage customer loyalty. As Palmer et al. (2000) noted, if information intensity and customized service reach high degrees, loyalty will likely be of both an attitudinal as well as behavioral nature, thus resulting in "true" customer loyalty.

Italian upscale hotels particularly should take into consideration all of these aspects, because according to the results of this study, Croatian upscale hotels perform better in ICT and information management. Moreover, they have better guest perceptions of new technologies and show better results regarding customer loyalty. This result is surprising because, when comparing the emerging tourist destination (e.g., Croatia) with the established tourist destination (e.g., Italy) better results are expected in the case of the latter. However, this result may be due to the fact that well-established tourist destinations have properties with deep traditions and could therefore show certain inertia to the introduction of new technologies. On the other hand, in emerging tourist destinations there might be more recently established hotels, with the most advanced ICT facilities.

This study contains a number of limitations, which should be considered as opportunities for the future research. The relatively small hotel census of Croatian hotels is the main one, consequently resulting in a smaller guest sample. It should be noted that Croatia in general and Dalmatia in particular have a low number of upscale hotels. Furthermore, due to the characteristics of the Croatian hotel sector, this study centered on upscale hotels in Dalmatia linked to the Association of Hoteliers of Dalmatia and Marcon firm, as these companies are characterized by more advanced management. Moreover, the Italian hotel census comprised a very small number of hotels situated in the south of the country (only 10%), which lags behind Central and Northern Italy in terms of devel-

tegorizacije hotela. Stoga ove rezultate treba oprezno interpretirati jer promatrane karakteristike hotela možda nisu reprezentativne. Kako bi se dobili rezultati pogodni za generaliziranje, buduće bi studije trebale uključiti vrhunske hotele iz drugih regija u obje zemlje. Nadalje, trebalo bi uključiti veći broj ispitanika u hrvatskim hotelima.

opment and hotel categorization. Therefore, results need to be interpreted with caution, as the studied hotel properties might not be representative. In order to obtain more generalizable results, future studies should approach upscale hotels located in other regions in both countries. Moreover, a greater number of respondents in Croatian hotels should be reached.

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Tablica 1: ***Katalog glavnih ICT aplikacija u hotelima***

ICT unutar ustanove	ICT za vanjsku uporabu
Hotelski hardver Osobno računalo Prijenosno računalo PDA 3G mreža GPS Osiguravanje sigurnosti na daljinu LCD zasloni Zasloni koji reagiraju na dodir TV u sobi: - digitalalna satelitska TV - kablovska TV - digitalna zemaljska TV - interaktivna TV DVD u sobi *Piped music* Telefon: - analogni/digitalni telefon - analogna/digitalna centrala Ambijentalna inteligencija	**Elektronski marketing and prodaja** Potpora oglašavanju i promidžbi: - promotivni CD/DVD - informativni internet - informativni e-letak - e-Magazin - multimediji (3D, virtualni razgled) Prihvat online narudžbi: - sustav rezervacije hotela bez mogućnosti plaćanja - sustav rezervacije hotela s mogućnošću plaćanja - sustav računalnih rezervacija (CRS) - sustav za globalnu distribuciju (GDS) - sustav rezervacije turističkih odredišta - dinamični paketi - elektronska distribucija korporativnim klijentima - m-commerce Samouslužna tehnologija : - rješenja za prijavu i odjavu iz hotela - pozivni centar - aplikacije za prepoznavanje glasa
Hotelski softver Uredski softver Posebni softver za različite službe Analiza podataka i upravljanje izvještajima Upravljanje projektima Simulatori Ekspertni sustavi Internetska sigurnost	**Upravljanje odnosima s klijentima (CRM)** Sustavi podataka o klijentima (CIS) E-mail marketing/direktni marketing Viralni marketing Programi lojalnosti
Mrežna povezanost Internetska povezanost pomoću RTC/RDSI/ADSL/žični pristupi Internetu/MTU/PLC/LMDS Lokalna računalna mreža (LAN) Bežična lokalna računalna mreža (W-LAN) Bluetooth Globalna interoperabilnost (WiMAX)	**ICT rješenja povezana s komunikacijom među klijentima (C2C komunikacija)** Pretraživači i metapretraživači Usporedba i predviđanje cijene Virtualne mrežne zajednice 2.0 Aukcijske mreže
Integrirani poslovni procesi Intranet ERP sustavi Online praćenje produkcijskog vremena Elektronsko izdavanje faktura	**Elektroničko upravljanje zalihama** Online narudžbe i potvrde o primitku robe Uporaba ICT-a za upravljanje zalihama ICT sustavi povezani s dobavljačima Online upravljanje skladištem

Izvor: Ruiz et al. (2010a), adapted from Buhalis (1998), eBusiness W@tch (2006), Observatorio (2007a) and Buhalis and Law (2008)

Table 1: ***Catalogue of the main ICT applications implemented in hotels***

IN-HOUSE ICT	ICT FOR EXTERNAL USE
Hotel hardware PC Laptop PDA 3G mobile GPS Telesecurity system LCD screens Touch-screens In-room TV: - digital satellite TV - cable TV - digital terrestrial TV - Interactive TV In-room DVD Piped music Phone: - analog/digital telephone - analog/digital switchboard Ambient intelligence	**Electronic marketing and sales** Advertising/promotional supports: - promotional CD/DVD - informative web - informative e-leaflet - e-Magazine - multimedia (3D, virtual tour) Online order reception: - hotel booking system without payment facilities - hotel booking system with payment facilities - computer reservations system (CRS) - global distribution systems (GDS) - booking system of tourist destinations - dynamic packages - electronic distribution to corporate customers - m-commerce Self-service technologies: - check-in/check-out solutions - call center - voice recognition applications
Hotel software Office software Specific departmental software Information analysis and report management Project management Simulators Expert systems Web security	**Customer relationship management (CRM)** Customer information system (CIS) E-mail marketing/direct marketing Viral marketing Loyalty program
Network connectivity Internet connection through RTC/RDSI/ADSL/cable/MTU/PLC/LMDS Local area network (LAN) through cable Wi-Fi local area network (W-LAN) Bluetooth World Wide Interoperability (WiMAX)	**ICT solutions related to C2C communications** Searchers and metasearchers Price comparison/predictor Virtual web communities 2.0 Auction webs
Business integrated processes Intranet ERP systems Online monitoring of production time Electronic invoicing	**Electronic supply management** Online order remittance/reception Use of ICT for supply management ICT systems connected to providers Online warehouse management

Source: Ruiz et al. (2010a), adapted from Buhalis (1998), eBusiness W@tch (2006), Observatorio (2007a) and Buhalis and Law (2008)

Tablica 2: ***Deskriptivna statistika i Mann-Whitney U test: Primjena novih tehnologija u talijanskim i hrvatskim hotelima – perspektiva menadžera***

S	STAVKE ZA NOVE TEHNOLOGIJE	IT N=60		HR N=17		U TEST		IT N=24	HR N=9	U TEST		IT N=36	HR N=8	U TEST	
		Mean	SD	Mean	SD	U	p	Mean 5*		U	p	Mean 4*		U	p
HARDVER	1. Osobno računalo	4,78	0,613	5,00	,000	450,5	,142	4,88	5,00	99,0	,379	4,72	5,00	124,0	,268
	2. Prijenosno računalo	4,07	0,918	4,71	,686	302,0	,006*	4,21	4,89	58,5	,024*	3,97	4,50	98,0	,135
	3. Server	4,78	0,761	4,76	,562	468,5	,336	4,63	4,78	106,0	,904	4,89	4,75	130,5	,255
	4. Sustav sigurnosne kopije	3,15	1,424	3,59	1,176	421,0	,254	3,83	3,67	88,5	,410	2,69	3,50	96,0	,112
	5. Osobni digitalni asistent	1,72	1,180	2,53	1,663	358,5	,030*	1,88	2,89	62,5	,040*	1,61	2,13	128,5	,564
	6. Digitalni telefon	3,72	1,541	4,00	1,620	414,0	,206	4,25	4,11	98,5	,671	3,36	3,88	111,0	,284
	7. Mobilni telefon	3,87	1,171	4,88	,485	229,0	,000*	4,33	4,78	70,0	,078	3,56	5,00	44,0	,001*
	8. Fax	3,97	1,484	3,94	1,197	473,0	,610	3,83	3,33	81,0	,255	4,06	4,63	130,5	,600
	9. Telefonska centrala	4,98	0,129	4,47	,800	337,0	,000*	4,96	4,22	63,0	,004*	5,00	4,75	108,0	,002*
	10. Digitalna kamera	3,13	1,408	3,29	1,160	451,5	,448	3,83	3,33	83,5	,290	2,67	3,25	90,5	,079
	11. LCD zaslon	4,92	0,381	4,59	1,064	444,5	,083	4,79	4,22	84,5	,158	5,00	5,00	144,0	1,000
	12. Zaslon na dodir	1,58	0,787	2,18	1,551	453,0	,436	1,79	2,67	80,5	,233	1,44	1,63	132,0	,672
	13. Digitalna zemaljska TV – DTT	3,93	1,071	2,24	1,678	234,5	,000*	4,08	2,00	28,5	,001*	3,83	2,50	98,5	,149
	14. DVD	2,52	1,308	2,65	1,320	476,5	,670	3,13	2,56	80,5	,253	2,11	2,75	97,0	,126
	15. Elektronička kasa	2,62	1,209	4,59	1,004	121,0	,000*	2,96	4,67	25,5	,001*	2,39	4,50	41,0	,001*
	16. Sustavi prodajnih mjesta	3,80	1,388	4,53	1,007	389,5	,096	3,88	4,67	84,0	,270	3,75	4,38	112,0	,276
	17. Kućni automatizirani sustavi	4,40	0,906	4,65	,606	458,5	,450	4,63	4,44	85,0	,234	4,25	4,88	92,5	,071
VEZA	18. Internetska veza	4,97	0,258	4,71	,849	458,0	,057	4,92	4,78	100,5	,463	5,00	4,63	126,0	,034*
	19. LTT	4,90	0,354	4,06	1,519	363,5	,003*	4,83	4,78	98,5	,537	4,94	3,25	76,0	,001*
	20. Wi-Fi	4,92	0,334	4,65	,786	449,5	,136	4,88	4,33	79,5	,064	4,94	5,00	136,0	,500
	21. Bluetooth	2,05	1,512	1,82	,951	491,5	,792	2,25	1,78	105,0	,892	1,92	1,88	132,5	,674
	22. WiMAX	1,23	0,909	1,29	,686	459,0	,209	1,58	1,33	105,5	,880	1,00	1,25	126,0	,034*
SOFTWARE	23. Programi za automatizaciju ureda	4,85	0,481	5,00	,000	450,5	,142	4,83	5,00	99,0	,379	4,86	5,00	124,0	,268
	24. Programi za dizajn	2,82	1,420	2,88	1,453	499,0	,889	3,17	2,89	99,0	,708	2,58	2,88	132,0	,702
	25. Sustavi za internetsku sigurnost	4,80	0,403	4,82	,529	474,0	,509	4,96	4,67	88,0	,105	4,69	5,00	100,0	,074
	26. Informatički podržani sustavi izdavanja računa	4,50	1,214	4,65	,786	501,0	,876	4,63	4,67	88,5	,240	4,42	4,63	126,5	,467
	27. Posebne aplikacije za razne odjele	4,47	0,892	4,24	1,348	486,5	,728	4,63	4,33	99,0	,642	4,36	4,13	138,0	,831
	28. Analiza podataka	4,28	1,010	4,29	1,047	505,5	,951	4,21	3,89	79,5	,197	4,33	4,75	96,0	,104
	29. Simulatori	3,67	1,160	2,53	1,625	307,5	,010*	3,58	2,00	53,5	,022*	3,72	3,12	111,5	,294

Table 2: ***Descriptive statistics and Mann-Whitney U test: New technologies adoption in Italian and Croatian hotels – manager perspective***

	NEW TECHNOLOGIES ITEMS	ITALY N=60		CROATIA N=17		U TEST		ITA N=24	CRO N=9	U TEST		ITA N=36	CRO N=8	U TEST	
		Mean	SD	Mean	SD	U	p	Mean 5*		U	p	Mean 4*		U	p
HARDWARE	1. PC computer	4.78	0.613	5.00	.000	450.5	.142	4.88	5.00	99.0	.379	4.72	5.00	124.0	.268
	2. Laptop	4.07	0.918	4.71	.686	302.0	.006*	4.21	4.89	58.5	.024*	3.97	4.50	98.0	.135
	3. Server	4.78	0.761	4.76	.562	468.5	.336	4.63	4.78	106.0	.904	4.89	4.75	130.5	.255
	4. Security copy systems	3.15	1.424	3.59	1.176	421.0	.254	3.83	3.67	88.5	.410	2.69	3.50	96.0	.112
	5. Personal digital assistant	1.72	1.180	2.53	1.663	358.5	.030*	1.88	2.89	62.5	.040*	1.61	2.13	128.5	.564
	6. Digital telephone	3.72	1.541	4.00	1.620	414.0	.206	4.25	4.11	98.5	.671	3.36	3.88	111.0	.284
	7. Mobile telephone	3.87	1.171	4.88	.485	229.0	.000*	4.33	4.78	70.0	.078	3.56	5.00	44.0	.001*
	8. Fax	3.97	1.484	3.94	1.197	473.0	.610	3.83	3.33	81.0	.255	4.06	4.63	130.5	.600
	9. Telephone exchange	4.98	0.129	4.47	.800	337.0	.000*	4.96	4.22	63.0	.004*	5.00	4.75	108.0	.002*
	10. Digital camera	3.13	1.408	3.29	1.160	451.5	.448	3.83	3.33	83.5	.290	2.67	3.25	90.5	.079
	11. LCD screen	4.92	0.381	4.59	1.064	444.5	.083	4.79	4.22	84.5	.158	5.00	5.00	144.0	1.000
	12. Touch screen	1.58	0.787	2.18	1.551	453.0	.436	1.79	2.67	80.5	.233	1.44	1.63	132.0	.672
	13. Digital Terrestrial TV – DTT	3.93	1.071	2.24	1.678	234.5	.000*	4.08	2.00	28.5	.001*	3.83	2.50	98.5	.149
	14. DVD	2.52	1.308	2.65	1.320	476.5	.670	3.13	2.56	80.5	.253	2.11	2.75	97.0	.126
	15. Electronic cash register	2.62	1.209	4.59	1.004	121.0	.000*	2.96	4.67	25.5	.001*	2.39	4.50	41.0	.001*
	16. Point of sale systems	3.80	1.388	4.53	1.007	389.5	.096	3.88	4.67	84.0	.270	3.75	4.38	112.0	.276
	17. Home automation systems	4.40	0.906	4.65	.606	458.5	.450	4.63	4.44	85.0	.234	4.25	4.88	92.5	.071
CONNECTION	18. Internet connection	4.97	0.258	4.71	.849	458.0	.057	4.92	4.78	100.5	.463	5.00	4.63	126.0	.034*
	19. Local area connection with cable	4.90	0.354	4.06	1.519	363.5	.003*	4.83	4.78	98.5	.537	4.94	3.25	76.0	.001*
	20. Wi-Fi	4.92	0.334	4.65	.786	449.5	.136	4.88	4.33	79.5	.064	4.94	5.00	136.0	.500
	21. Bluetooth	2.05	1.512	1.82	.951	491.5	.792	2.25	1.78	105.0	.892	1.92	1.88	132.5	.674
	22. WiMAX	1.23	0.909	1.29	.686	459.0	.209	1.58	1.33	105.5	.880	1.00	1.25	126.0	.034*
SOFTWARE	23. Office automation programs	4.85	0.481	5.00	.000	450.5	.142	4.83	5.00	99.0	.379	4.86	5.00	124.0	.268
	24. Design programs	2.82	1.420	2.88	1.453	499.0	.889	3.17	2.89	99.0	.708	2.58	2.88	132.0	.702
	25. Web security systems	4.80	0.403	4.82	.529	474.0	.509	4.96	4.67	88.0	.105	4.69	5.00	100.0	.074
	26. Informatics invoicing systems	4.50	1.214	4.65	.786	501.0	.876	4.63	4.67	88.5	.240	4.42	4.63	126.5	.467
	27. Specific department applications	4.47	0.892	4.24	1.348	486.5	.728	4.63	4.33	99.0	.642	4.36	4.13	138.0	.831
	28. Information analysis	4.28	1.010	4.29	1.047	505.5	.951	4.21	3.89	79.5	.197	4.33	4.75	96.0	.104
	29. Simulators	3.67	1.160	2.53	1.625	307.5	.010*	3.58	2.00	53.5	.022*	3.72	3.12	111.5	.294

Tablica 3: ***Deskriptivna statistika i Mann-Whitney U test: Primjena novih tehnologija u talijanskim i hrvatskim hotelima – perspektiva menadžera***

STAVKE ZA NOVE TEHNOLOGIJE		ITALY N=60		CROATIA N=17		U TEST		ITA N=24	CRO N=9	U TEST		ITA N=36	CRO N=8	U TEST	
		Mean	SD	Mean	SD	U	p	Mean 5*		U	p	Mean 4*		U	p
OPREMA KOJOM SE TIJEKOM BORAVKA U HOTELU SLUŽE GOSTI	30. Video nadzor	4,32	1,033	4,53	1,125	428,0	,223	4,50	4,33	105,0	,865	4,19	4,75	96,5	,099
	31. LCD zaslon	4,95	0,387	4,59	1,064	429,0	,010*	4,88	4,44	88,5	,114	5,00	4,75	126,0	,034
	32. Zaslon na dodir	1,73	1,436	1,41	1,176	436,5	,223	1,96	1,44	89,5	,317	1,58	1,38	126,5	,467
	33. Satelitska digitalna TV	3,30	1,816	3,65	1,801	450,5	,432	3,46	4,22	98,0	,647	3,19	3,00	140,0	,897
	34. Kablovska TV	1,90	1,664	2,71	1,929	398,5	,082	2,33	2,00	100,0	,696	1,61	3,50	75,5	,006*
	35. DTT	4,57	1,125	2,24	1,751	158,0	,000*	4,46	2,44	32,0	,000*	4,64	2,00	49,0	,000*
	36. Interaktivna TV	2,03	1,677	1,82	1,380	490,5	,763	2,79	2,11	85,5	,312	1,53	1,50	140,5	,867
	37. DVD u sobama	1,88	1,303	2,00	1,118	429,0	,264	2,50	2,11	88,5	,412	1,47	1,88	104,0	,096
	38. Stereo u sobama	1,75	1,188	1,24	,562	417,5	,151	2,38	1,33	65,0	,053	1,33	1,13	135,0	,666
	39. Analogni telefon	4,77	0,831	2,35	1,835	178,0	,000*	4,58	2,22	34,0	,000*	4,89	2,50	58,0	,000*
	40. Digitalni telefon	1,73	1,388	4,00	1,732	186,0	,000*	2,04	4,44	34,5	,001*	1,53	3,50	65,5	,002*
	41. Ambijentalna inteligencija	3,52	1,568	2,59	1,873	364,5	,061	3,67	3,22	91,5	,462	3,42	1,88	72,5	,024*

Table 3: ***Descriptive statistics and Mann-Whitney U test: New technologies adoption in Italian and Croatian hotels – manager perspective***

NEW TECHNOLOGIES ITEMS		ITALY N=60		CROATIA N=17		U TEST		ITA N=24	CRO N=9	U TEST		ITA N=36	CRO N=8	U TEST	
		Mean	SD	Mean	SD	U	p	Mean 5*		U	p	Mean 4*		U	p
EQUIPMENT FOR GUEST SERVICE DURING HIS STAY	30. Video surveillance	4.32	1.033	4.53	1.125	428.0	.223	4.50	4.33	105.0	.865	4.19	4.75	96.5	.099
	31. LCD screen	4.95	0.387	4.59	1.064	429.0	.010*	4.88	4.44	88.5	.114	5.00	4.75	126.0	.034
	32. Touch screen	1.73	1.436	1.41	1.176	436.5	.223	1.96	1.44	89.5	.317	1.58	1.38	126.5	.467
	33. Satellite digital TV	3.30	1.816	3.65	1.801	450.5	.432	3.46	4.22	98.0	.647	3.19	3.00	140.0	.897
	34. Cable TV	1.90	1.664	2.71	1.929	398.5	.082	2.33	2.00	100.0	.696	1.61	3.50	75.5	.006*
	35. DTT	4.57	1.125	2.24	1.751	158.0	.000*	4.46	2.44	32.0	.000*	4.64	2.00	49.0	.000*
	36. Interactive TV	2.03	1.677	1.82	1.380	490.5	.763	2.79	2.11	85.5	.312	1.53	1.50	140.5	.867
	37. DVD in rooms	1.88	1.303	2.00	1.118	429.0	.264	2.50	2.11	88.5	.412	1.47	1.88	104.0	.096
	38. Stereo in rooms	1.75	1.188	1.24	.562	417.5	.151	2.38	1.33	65.0	.053	1.33	1.13	135.0	.666
	39. Analog telephone	4.77	0.831	2.35	1.835	178.0	.000*	4.58	2.22	34.0	.000*	4.89	2.50	58.0	.000*
	40. Digital telephone	1.73	1.388	4.00	1.732	186.0	.000*	2.04	4.44	34.5	.001*	1.53	3.50	65.5	.002*
	41. Ambient intelligence	3.52	1.568	2.59	1.873	364.5	.061	3.67	3.22	91.5	.462	3.42	1.88	72.5	.024*